Growth with or without Equity? The distributional impact of Indonesian development

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This paper surveys articles that have examined and sought to explain the distributional change experienced in Indonesia during the past 30 years of rapid economic development. The literature is critically evaluated, and methodological difficulties and current data limitations are highlighted and point the way for advances in future research.

Indonesia has experienced remarkable economic change over the past 30 years. The average real GDP growth rate of 7.1 per cent per annum between 1968 and 1997 (van der Eng 2000) implies a more than seven-fold increase in GDP. Population growth claws this back to a still very substantial four-fold increase in per capita terms. This growth has been accompanied (and caused) by immense structural change. Agriculture was the predominant economic sector in the 1970s and played an important role in generating growth when the introduction of new high yielding variety seeds, multi-cropping techniques, the replacement of hand-knives (*ani-ani*) with the more efficient sickle and the spread of irrigation saw agricultural returns increase markedly.[1] The windfall gains flowing from the OPEC oil boom starting in the mid 1970s also put the government in a strong position to improve the country's infrastructure. One consequence was that primary schools were constructed in villages throughout the land and enrolments grew rapidly. The country's manufacturing potential was slowly developing over this period but it was only in the mid 1980s that manufacturing really took off and dislodged agriculture as the dominant economic sector. The oil price crash of 1982/83 forced the government to rethink its previously protectionist stance on international trade. In the mid 1980s import barriers were reduced (as were export restrictions) and international capital was welcomed. This was coupled with far-reaching financial sector deregulation and, as a result of these reforms, the manufacturing sector boomed. The export sector benefited from large devaluations of the rupiah in 1983 and 1986 and manufacturing export earnings grew rapidly.

Rapid change of this sort generates growth and increases average standards of living. However, the better-educated, skilled workforce is often the most able to take advantage of the opportunities that industrialisation presents. Structural change can also cause displacement and dislocation and so result in some people becoming worse-off. Thus, growth can be accompanied by a widening of the income distribution as posited by Kuznets (1955). In the early stages some groups gain, others are left behind and inequality increases. Eventually however, the benefits of growth

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1 Papanek (1985) documents the changes in rice production over this period. Rice is the primary agricultural crop in Java. The Outer Islands have a greater concentration of cash crops such as coffee, tobacco and rubber.

spread through the society: those initially left behind catch up and inequality falls. The Kuznets hypothesis has received very mixed empirical support and the relationship between inequality and per capita income varies widely even within Southeast Asia (see Krongkaew 1994 and Booth 2000). The Indonesian government nevertheless recognised the possibility of increasing inequality when it enshrined equity as a major policy goal, alongside growth and stability, in the third Five Year Plan (1980–1984). It was around this time that concern about perceived increases in inequality was being expressed in the media and other public fora.

This paper examines distributional change in Indonesia over the last 30 years of economic development. Booth (2000) provides a complementary examination of inequality over this period, focusing largely on the more general question of the consequences of government policies on living standards and poverty rates. In contrast, this paper aims to provide a critique of the literature on the measurement of inequality.

Distributional changes during the New Order and economic crisis

An examination of the distributional impact of development only became possible in Indonesia with the advent of the National Socioeconomic Survey (*Survei Sosial Nasional*, or Susenas) in the mid 1960s. Prior to this there was no nationally representative sample of the Indonesian population and it was not possible to observe how income or expenditure was distributed across households.[2] The Susenas is a large, stratified, random sample of the Indonesian population. It collects an extensive array of information about Indonesian households, including data on the demographic composition of households, households' economic activities and other indicators of household welfare. Although the Susenas collects data on both household expenditure and income, the official figures and almost the entire literature focus on the expenditure figures. This is justified on the basis that household expenditure is a better estimate of the household's permanent income (and hence welfare) but this paper argues that the income module has been ignored to the detriment of the literature. The Susenas expenditure module has been conducted every third year since 1981 and collects detailed data on household food and non-food expenditures.[3] It also includes data on the value of consumption of home-produced products and this consumption is included in the 'total household expenditure' figure. In this section the official national inequality statistics as presented by the Central Statistical Agency (*Badan Pusat Statistik*, BPS) and studies that use the Susenas data to examine changes in regional inequality are discussed. Susenas data are the only nationally representative data available over an extensive time period. A discussion of the limitations of the papers and data is reserved for the subsequent section.

Table 1 presents Gini coefficients of household per capita expenditure from 1964/65 to 1999. These are presented at the national level and are disaggregated by urban and rural regions.[4] These figures are those reported by BPS and calculated from the Susenas per

2 Some studies, particularly before the advent of the Susenas, have examined distributional issues on the basis of data from one or more villages. It is difficult to know in these cases how representative this is of the rest of the country (see, for example, Sinaga 1978; Hayami and Kikuchi 1985). Here we focus on inequality at the national and provincial levels.

3 Prior to 1981 the module was conducted at irregular intervals. The coverage of the Susenas has also varied across years. East Timor was excluded up until 1982. Irian Jaya was excluded prior to 1978. Maluku was excluded in 1964/65. A more limited core expenditure questionnaire is conducted annually but covers a much smaller range of expenditures and is not comparable with the more detailed module. The core expenditure data has however been used to provide timely information in years between modules. For example, the expenditure module was conducted in 1996 and 1999 and so couldn't inform policymakers about the crisis impact in a timely fashion. For more details on the Susenas see Surbakti (1995) and Rand's web page at www.rand.org/labor/bps.data/webdocs/susenas/susenas_main.htm.

4 There are a large number of statistics that can be used to summarise the level of inequality in a society. In this paper we will rely heavily on the Gini coefficient because it is the most commonly used in the literature. It is also the statistic used by the BPS. The Gini coefficient ranges from 0 to 1. A value of 0 corresponds to perfect equality and a value of 1 perfect inequality (one person has all the income). See Deaton (1997) for a detailed explanation of its properties.

Table 1
Trends in the Gini coefficient of household per capita consumption expenditure, 1964–1999

	Gini coefficient			Share of bottom 40 per cent (per cent)		
Year	Urban	Rural	Urban and rural	Urban	Rural	Urban and rural
1964/65	0.34	0.35	0.35	..	..	..
1969/70	0.33	0.34	0.35	19.48	19.56	18.62
1976	0.35	0.31	0.34	19.56	21.22	19.56
1978	0.38[a]	0.34	0.38	17.40	19.88	18.13
1980	0.36	0.31	0.34	18.66	21.16	19.55
1981	0.33	0.29	0.33	20.83	22.81	20.44
1984	0.32	0.28	0.33	20.63	22.35	20.75
1987	0.32	0.26	0.32	21.48	24.30	20.87
1990	0.34	0.25	0.32	19.67	24.41	21.31
1993	0.33	0.26	0.34	20.48	25.12	20.34
1996	0.36	0.27	0.36	19.03	23.24	20.28
1999	0.33	0.25	0.32	..	..	..

[a] 1978 sample was smaller than for other years (n = 6,300)
Sources: Gini coefficients from Booth, A., 2000. 'Poverty and inequality in the Soeharto era: an assessment', *Bulletin of Indonesian Economic Studies*, 36(1):73–104, based on *Statistical Yearbook of Indonesia*, various issues; 1990–96. 1999 figures are derived from correspondence with Asep Suryahadi at Social Monitoring and Early Response Unit (SMERU). Share figures from Asra, A., 2000. 'Poverty and inequality in Indonesia: estimates, decomposition and key issues', *Journal of the Asia Pacific Economy*, 51(1–2):91–111.

capita household expenditure data. The table shows that expenditure inequality dropped almost monotonically from the first years of the data in the mid 1960s to 1990 and then increased through the 1990s until 1996.[5] The crisis reduced inequality between 1996 and 1999 (the most recent year for which there are data available).

Although there is a notable increase in these inequality figures in the 1990s, the continuing decline throughout the 1980s, particularly the latter years, is in contrast to the popular perception that inequality was increasing during these years. Consequently these figures have been viewed with a degree of scepticism by some social commentators. However, interestingly (if one considers that popular opinion as represented in the media is largely a product of urban areas), the distributional changes in urban areas are largely consistent with the popular story. Table 1 shows that urban inequality has increased and that most of this increase occurred between the early 1980s and 1996. The increase largely followed the manufacturing boom. Urban inequality stayed relatively constant during the early and mid 1980s and then increased from 1987 until the crisis. It is thus only the absence of a sharper increase in urban inequality at the start of the manufacturing boom in the early and mid 1980s that can be viewed with any degree of surprise.

The national figures do not reflect this increase in inequality because the urban increase is more than offset by a sharp decline in inequality in rural areas where the majority of the population still live.[6] Rural inequality declined substantially over the period and, even though it increased during the 1990s, its level in 1996 of 0.27 is much lower than it was

5 The exception is the sharp increase from 1976 to 1978. The 1978 sample was much smaller than other years and so may not be comparable with the other figures.
6 In 1971, 17 per cent of the population lived in urban areas. This share increased to 25 per cent in 1985 and to 31 per cent in 1990 (Hill 1994:158).

in the 1960s and 1970s (0.35 in 1964/65). This is a large decrease for Gini coefficients which are not particularly sensitive indicators and can change by only small amounts in the face of even relatively large distributional shocks.

Is it plausible that rural inequality declined by this amount over this period? Alatas and Bourguignon (2000) found that the returns to land size decreased between 1980 and 1996. They hypothesised that this could be due to changes in agricultural prices between crops generally grown on small and large plots or to faster adoption of new technologies by smaller landholders. Opportunities for off-farm earnings for rural households have undoubtedly also contributed to falling rural inequality. Using data from 14 villages in Java and Sulawesi, Rietveld (1986) found that non-agricultural activities of farm households had an equalising effect on incomes. The most important single force in declining rural inequality, however, has been the geographical location of these off-farm opportunities. Manufacturing is heavily concentrated in Java. Rural Javanese households have historically been the poorest in the country. Unlike other countries where manufacturing and its opportunities have been clustered in historically more prosperous regions (Thailand for example), circular migration to cities and rural industrialisation on Java has provided the very poorest farm households with opportunities to increase their incomes. In this way rural Java has gained on rural areas in the Outer Islands and national rural inequality has decreased dramatically.

Decompositions of inequality

This story is supported by several studies that have sought to decompose inequality into components corresponding to rural versus urban areas, Java versus Outer Islands and, in some cases, into provincial components. Here we focus on Hughes and Islam (1981) and Akita and Lukman (1999) whose findings are representative of the wider literature and together provide a picture of how inter and intra-provincial differences in living standards and urban–rural differences have changed between the mid 1960s and the mid 1990s (Hughes and Islam examine the period 1964/65 to 1976 and Akita and Lukman the period from 1987 to 1993).[7] The figures from the two studies are unfortunately not directly comparable because Hughes and Islam base their calculations on monthly per capita expenditure figures from the Susenas, whereas Akita and Lukman only have access to household (rather than per capita) expenditure. However, quite a bit can be garnered from an examination of the relativities between urban and rural areas and Java and the Outer Islands.

Table 2 presents figures on average monthly household expenditure by province and urban/rural status from both papers. At the beginning of the New Order period, average per capita household expenditure was higher in the Outer Islands than in Java. Urban areas (in both the Outer Islands and Java) had higher expenditure per capita than rural areas. The urban Outer Islands thus had the highest per capita expenditure followed by urban Java, with rural areas in the Outer Islands just behind. Rural Java was by far the poorest region in 1964/65 and remains the poorest in terms of per capita expenditures today. There have been significant changes in the relativities between regions since the mid 1960s. Between 1964/65 and 1976 urban Java grew more quickly than the rest of the country, due to its role as the nation's manufacturing centre. By 1976 it had overtaken urban areas in the Outer Islands and by 1987 there was very little difference in average monthly household expenditure between the Outer Islands as a whole and Java. The gap between rural Java and the rural Outer Islands also decreased sharply between 1964/65 and 1976. Rural areas in the Outer Islands had expenditure levels considerably higher than expenditures in rural Java up until 1976. Apart from the off-farm employment opportunities referred to

7 Arndt (1975) is one of the earliest papers to examine nationally representative evidence on income distribution and provides an interesting discussion of early New Order government policy. As far as I am aware there have been no decomposition analyses conducted on data more recent than 1993.

Table 2
Average monthly expenditure, 1964/65–1993

Average monthly per capita household expenditure[a]

		Expenditure (Rp)			Index (all Indonesia = 1.00)		
	Region	Rural	Urban	All	Rural	Urban	All
1964/65 (Old Rp)	Java	4,640	7,279	5,045	0.80	1.25	0.87
	Outer Islands	7,040	9,240	7,319	1.21	1.59	1.26
	Indonesia	5,472	7,880	5,818	0.94	1.35	1.00
1970 (New Rp)	Java	1,029	1,714	1,144	0.76	1.27	0.85
	Outer Islands	1,712	2,070	1,759	1.27	1.53	1.30
	Indonesia	1,272	1,819	1,351	0.94	1.35	1.00
1976	Java	3,468	7,025	4,113	0.77	1.57	0.92
	Outer Islands	4,772	6,797	5,133	1.06	1.51	1.14
	Indonesia	3,950	6,942	4,489	0.88	1.55	1.00

Average monthly household expenditure[b]

		Expenditure (Rp '000)			Index (all Indonesia = 1.00)		
	Region	Rural	Urban	All	Rural	Urban	All
1987	Java	76.1	163.6	101.8	0.74	1.58	0.98
	Outer Islands	91.2	167.1	106.1	0.88	1.62	1.03
	Indonesia	82.2	164.5	103.4	0.79	1.59	1.00
1990	Java	100.1	212.1	136.8	0.73	1.54	0.99
	Outer Islands	120.5	207.8	140.0	0.87	1.51	1.01
	Indonesia	108.5	210.8	138.0	0.79	1.53	1.00
1993	Java	133.6	297.2	193.4	0.69	1.54	1.00
	Outer Islands	157.7	293.3	191.4	0.82	1.52	0.99
	Indonesia	143.7	296.1	192.7	0.75	1.54	1.00

Sources: [a] Hughes, G. and Islam, I., 1981. 'Inequality in Indonesia: a decomposition analysis of the degree of inequality in the distribution of income', *Bulletin of Indonesian Economic Studies*, 17(2):42–71; [b] Akita, T. and Lukman, R., 1999. 'Spatial patterns of expenditure inequalities in Indonesia: 1987, 1990 and 1993', *Bulletin of Indonesian Economic Studies*, 35(2):67–90.

above, the Green Revolution also worked to close this gap as it greatly benefited rice farmers, who are largely concentrated on Java, and the opportunities for off-farm work were also greater there. The smaller gap remained relatively stable between 1987 and 1993. Mean household expenditure in the rural Outer Islands was 82 per cent of the national average in 1993 compared to 69 per cent in rural Java.

The changes discussed above are captured in the decompositions of national inequality into inter-regional components and intra-regional components.[8] Although inequality within rural areas was the largest contributor to inequality in 1970–76, the contribution of

8 Hughes and Islam (1981) decomposed a number of inequality indices (Table 3). The Theil index decomposition is shown here because it is the index used by Akita and Lukman (1999). See Deaton (1997) for a discussion of its properties.

Table 3
Decomposition of aggregate inequality, 1970–76
(contribution to Theil Index, per cent)

	1970	1976	1976 price adjusted
Within groups			
Java urban	13.0	22.4	24.0
Java rural	29.7	28.6	35.0
Outer Islands urban	6.6	8.7	8.0
Outer Islands rural	34.4	23.8	22.6
Between groups	16.3	16.6	10.5
Between urban and rural in			
Java	11.6	19.1	13.6
Outer Islands	1.3	5.6	3.8
Indonesia	4.7	12.7	9.6
Between Java and Outer Islands	10.2	2.6	n.a.

Source: Hughes, G. and Islam, I., 1981. 'Inequality in Indonesia: a decomposition analysis of the degree of inequality in the distribution of income', *Bulletin of Indonesian Economic Studies*, 17(2):42–71.

Table 4
Inequality decomposition by urban/rural status, 1987–93
(per cent contribution to Theil-T)

	1987	1990	1993
Urban	37.6	43.0	45.2
Rural	39.6	35.3	30.3
Within share	77.2	78.2	75.4
Between share	22.8	21.8	24.5

Source: Akita, T. and Lukman, R., 1999. 'Spatial patterns of expenditure inequalities in Indonesia: 1987, 1990 and 1993', *Bulletin of Indonesian Economic Studies*, 35(2):67–90.

urban inequality increased sharply during that period. This increase largely occurred in Java while urban inequality in the Outer Islands remained relatively stable. Urban inequality continued to increase through the 1980s and by 1987 inequality within urban areas had become the largest single contributor to inequality (38 per cent of total inequality in 1987) and its contribution continued to grow through to 1993 (45 per cent of total inequality, see Table 4) (Akita and Lukman 1999).

Tables 5 and 6 further disaggregate and present inequality measures and mean monthly household expenditure by province. The narrowing of the gap between the Outer Islands and Java means that inter-provincial inequality is not a large contributor to overall inequality. Akita and Lukman (1999) find that it accounted for only 17 per cent of total inequality in 1987. The contribution of inter-provincial inequality to total inequality has remained relatively stable and had increased only slightly to 18.8 per cent in 1993 (consistent with the findings of Akita and Lukman 1995). Booth (1996), however, hypothesises that Java's income is likely to increase relative to the Outer Islands (because of the concentration of manufacturing) and so inter-provincial inequality may widen in the future.

Although growth in manufacturing reduced the Outer Islands–Java gap, it has worked towards widening the gap between the rural and urban areas within provinces which was already large in 1964/65. By 1993 average urban household expenditures in Indonesia as a whole were roughly double those in rural areas, compared to only 1.4 times in the mid 1960s. Intra-provincial inequality

Table 5
Household expenditure and urban share by province, 1987 and 1993

	Mean monthly household expenditure (all Indonesia = 1.00)		Share of urban households (per cent)	
	1987	1993	1987	1993
Jakarta	2.34	2.50	100.00	100.00
East Kalimantan	1.45	1.71	42.20	49.70
Riau	1.25	1.26	31.60	32.80
South Sumatra	1.20	1.02	27.20	29.50
North Sumatra	1.18	1.09	29.50	37.20
West Sumatra	1.17	1.03	15.30	22.60
Aceh	1.14	1.10	10.00	17.20
Jambi	1.06	0.97	13.80	22.50
Bengkulu	1.06	0.90	12.30	24.40
South Kalimantan	1.04	1.05	22.10	27.20
North Sulawesi	1.03	0.90	18.40	24.30
Maluku	1.02	1.08	12.60	21.80
Central Kalimantan	1.01	1.06	13.60	20.10
West Java	0.98	1.06	24.30	36.00
West Kalimantan	0.98	1.05	17.60	19.20
Lampung	0.97	0.75	14.40	11.90
Bali	0.97	1.13	19.40	30.10
Central Sulawesi	0.97	0.93	8.70	17.90
Yogya	0.92	1.07	24.70	54.80
Irian Jaya	0.92	1.13	23.50	22.70
East Java	0.84	0.81	22.90	27.90
South Sulawesi	0.84	0.89	18.70	24.90
East Nusa Tenggara	0.83	0.78	8.60	11.60
Central Java	0.80	0.77	24.20	28.10
Southeast Sulawesi	0.74	0.85	9.40	18.80
West Nusa Tenggara	0.72	0.72	18.80	17.20
East Timor	0.63	0.84	0.00	7.40

Source: Akita, T., Lukman, R. and Yamada, Y., 1999. 'Inequality in the distribution of household expenditures in Indonesia: a Theil decomposition analysis', *Developing Economies*, 37(2):197–221.

currently accounts for the major portion of inequality and its contribution has been increasing. Inequality rose in 19 out of the 27 provinces between 1990 and 1993. Not surprisingly Jakarta has very high inequality (the highest in 1993). Inequality is also relatively high within Bali and Irian Jaya. East Timor has experienced large increases in inequality.

Overall, the studies reveal that

- urban inequality increased sharply to become the main contributor to inequality, driven largely by increases in inequality in urban areas in Java
- the gap between urban and rural areas increased
- rural areas in Java gained on rural areas in the Outer Islands leading to a large decrease in rural inequality and more than offset the increases in urban inequality
- between 1987 and 1993 inter-provincial differences remained relatively stable and small.

So, the statistics confirm the perception that urban inequality has been increasing but suggest that the popular view neglects the experiences of the majority of the population

Table 6
Intraprovincial inequality, 1976–1993

	1976		1987		1990		1993	
	Gini coefficient	Rank	Gini coefficient	Rank	Gini coefficient	Rank	Gini coefficient	Rank
Jakarta	0.392	24	0.333	17	0.352	22	0.379	25
East Java	0.334	16	0.381	25	0.351	21	0.379	24
Yogyakarta	0.372	20	0.363	24	0.378	25	0.378	23
West Java	0.298	9	0.36	23	0.358	24	0.359	22
West Sumatra	0.268	3	0.312	7	0.328	15	0.355	21
East Kalimantan	0.235	2	0.306	5	0.312	11	0.354	20
Bali	0.227	1	0.356	22	0.342	17	0.347	19
Aceh	0.296	8	0.333	16	0.279	3	0.344	18
South Sumatra	0.306	10	0.322	10	0.313	12	0.341	17
Central Java	0.314	13	0.33	15	0.336	16	0.34	16
West Kalimantan	0.318	14	0.31	6	0.319	13	0.337	14
West Nusa Tenggara	0.309	12	0.345	19	0.354	23	0.337	15
Maluku	0.375	21	0.35	21	0.277	2	0.334	13
Central Sulawesi	0.377	23	0.326	12	0.305	10	0.331	12
South Sulawesi	0.354	19	0.318	8	0.348	19	0.321	11
Southeast Sulawesi	0.354	19	0.349	20	0.35	20	0.318	10
South Kalimantan	0.285	6	0.321	9	0.295	7	0.318	9
East Nusa Tenggara	0.375	21	0.342	18	0.344	18	0.314	8
North Sumatra	0.276	5	0.327	13	0.293	5	0.313	7
North Sulawesi	0.413	25	0.322	11	0.294	6	0.311	6
Lampung	0.332	15	0.329	14	0.319	14	0.307	5
Riau	0.342	18	0.291	4	0.296	9	0.296	4
Bengkulu	0.306	10	0.261	1	0.293	4	0.29	2
Central Kalimantan	0.271	4	0.288	3	0.296	8	0.29	3
Jambi	0.289	7	0.277	2	0.262	1	0.285	1
Irian Jaya			0.426		0.371		0.389	
East Timor			0.258		0.367		0.404	
Indonesia			0.372		0.361		0.378	
Within province (per cent)				83.00		83.30		81.20
Between province (per cent)				17.00		16.70		18.80

Source: For 1976: Islam, I. and Khan, H., 1986. 'Spatial patterns of inequality and poverty in Indonesia', *Bulletin of Indonesian Economic Studies*, 22(2):80–102.
For 1987, 1990 and 1993: Akita, T., Lukman, R. and Yamada, Y., 1999. 'Inequality in the distribution of household expenditures in Indonesia: a Theil decomposition analysis', *Developing Economies*, 37(2):197–221.

that reside in rural areas, and the many outside Java. This is not so surprising given that the popular view emerges largely from the experience of urban centres.[9] When changes in other parts of the country are allowed for, it is not necessarily surprising that the urban experience is not representative of the national experience. This is not to say that the figures presented above are trouble-free, and criticisms of the figures are discussed in the following section.

9 This can be seen in the stories in the press that focus on the accrual of wealth of the mega-wealthy and the middle-class patronage of extravagant Jakarta shopping malls—it may not be inaccurate to categorise this view even more narrowly as Jakarta-centric.

Crisis impact

The recent financial crisis resulted in a sharp decrease in inequality as is evident in the sharp decline in the national Susenas Gini coefficient from 0.36 to 0.32 between 1996 and 1999 (Table 1). Skoufias and Suryahadi (2000) have investigated this decline and find that it seems to have arisen from a decrease in regional inequality, where regions are defined by province and urban/rural status. Urban areas (which tend to be wealthier than neighbouring rural areas) were hit harder than rural areas and the urban middle class who lost their formal sector jobs were especially harshly affected. Some rural households gained from the increased export opportunities resulting from the depreciation of the rupiah and the increase in rice prices. Java was hit harder than the Outer Islands. Skoufias and Suryahadi (2000) find that inequality within regions actually increased.

In judging the usefulness of estimates from the Susenas it is useful to have a source of comparison. Historically there has been no such source, however, the concern over the recent financial crisis has spawned a number of comparison surveys. The decrease in inequality evident in Susenas is confirmed in the Indonesian Family Life Survey (IFLS) (see Beegle, Frankenberg and Thomas 1999).[10] The 100 Villages Survey also shows decreases in inequality in urban areas during the crisis, although not in rural areas (Skoufias, Suryahadi and Sumarto 1999).[11]

Poverty

Before moving on to the methodological limitations of the figures presented above, it is important to discuss the relationship between inequality and poverty. Increasing inequality does not imply that poverty is increasing.

Table 7
Headcount measure of poverty using the BPS official poverty line, 1976–99

	Urban	Rural	Total
1976	38.8	40.4	40.1
1978	30.8	33.4	33.3
1980	29.0	28.4	28.6
1981	28.1	26.5	26.9
1984	23.1	21.2	21.6
1987	20.1	16.4	17.4
1990	16.8	14.3	15.1
1993	14.2	13.1	13.5
1996	9.7	12.3	11.3
1999	19.8	25.85	23.6[a]

[a] BPS changed the commodity bundle it used to calculate the poverty line in 1999. The 1999 figures are hence not directly comparable with those from previous years. If the same methodology had been used as in previous years the national poverty rate would have been 18.9 per cent in 1999 (Suryahadi et al. 2000).

Sources: Hill, H., 1996. *The Indonesian Economy since 1966: Southeast Asia's emerging giant*, Cambridge University Press, Melbourne; Booth, A., 2000. 'Poverty and inequality in the Soeharto era: an assessment', *Bulletin of Indonesian Economic Studies*, 36(1):73–104; Pradhan, M., Suryahadi, A., Sumarto, S. and Pritchett, L., 2000. *Measurement of Poverty in Indonesia: 1996, 1999, and beyond*, Working Paper, Social Monitoring and Early Response Unit (SMERU) Research Institute, Jakarta.

Even with inequality increasing in the 1990s it seems that the increase in incomes at the top of the distribution did not come at the expense of absolute gains for those at the bottom end. Table 7 presents estimates of the Indonesian poverty rate (percentage of the population living under the official poverty line) over the New Order period. Poverty decreased until the onset of the crisis and then increased sharply between 1996 and 1999; it has declined since 1999

10 The IFLS is a large scale random sample of the Indonesian population on Sumatra, Java, Bali, West Nusa Tenggara, South Kalimantan and South Sulawesi. It was conducted in 1993/94, 1997/98 and in late 1998. It is an ongoing survey and a further round has recently been conducted.

11 The discrepancy between rural areas in the Susenas and the 100 Villages Survey is more likely to reflect deficiencies in the 100 Villages data than in the Susenas. The 100 Villages Survey collects data on 120 households in 100 villages around Indonesia. Unlike the Susenas, it is not a nationally representative sample. It over-samples from rural areas and the urban areas covered are not in large metropolitan centres. The question on household consumption changed between the May 1997 round and the August 1998 round which were used in Skoufias and Suryahadi (2000), which is potentially problematic.

but in 2000 was still above its pre-crisis level (Suryahadi, Sumarto, Suharso and Pritchett 2000).

Poverty figures are of course a function of the poverty line used. Indonesia's poverty line has been widely criticised for being too low. In particular, the share of non-food items used to construct the poverty line is very low by international standards. Nevertheless, Ravallion and Huppi (1991) show that regardless of what poverty line is used, national poverty decreased between 1984 and 1987. Alatas and Bourguignon (2000) found the same result for the period 1980 to 1996, and Cameron (2000) showed that this was true also for Java between 1984 and 1990.[12]

That poverty declined dramatically during the New Order period is well-established. That inequality decreased until 1990 and increased only marginally in the mid 1990s, as suggested in Table 1, is more hotly contested. The next section focuses on the limitations of the inequality figures and discuss how addressing them might affect conclusions about distributional change.

Methodological issues

While there are a number of grounds on which the figures reported above can be criticised, some are more legitimate than others.

Reliance on the Susenas expenditure data

Almost all of the studies of changes in inequality in Indonesia have used the Susenas expenditure data. These data are collected from a large number of questions about the expenditure of the household. Detailed questions are asked about food expenditure in the past week and non-food expenditure in the past twelve months. Households are also asked to value any produce of their own that they have consumed. These figures are converted to monthly values to produce estimates of the value of the household's monthly expenditure. The reliability of the Susenas data has been criticised in some quarters. However, amongst those who regularly work with such data the Susenas is held in reasonably high regard on the basis that it exhibits the empirical regularities one would expect to see in data of this kind[13] and because of the data collection processes followed. BPS follows international standard data-collection practice and the data are unlikely to be of a lower quality than that collected in other countries at a similar level of development with which Indonesia is most often compared. For example, Deaton (2000) cites India and Indonesia as countries that produce 'best practice consumption measures' (see Surbakti 1995 for details of data collections procedures).

One of the more serious criticisms leveled at the accuracy of the Susenas data is that its estimate of aggregate household consumption is substantially lower than that in the National Accounts (about 50 per cent in the 1990s). This difference is advanced as evidence that the Susenas considerably underestimates household expenditure. It is worth noting that this discrepancy is common around the world—in both developed and developing countries. At least part of this difference is driven by the difference in definitions between the two data sources. The National Accounts consumption figure includes the imputed rental of owner-occupied dwellings as well as consumption of non-profit organisations. The former component is large. For instance, Deaton (2000) reports that in India, where the ratio between the household survey and national accounts figures is of approximately the same magnitude as in Indonesia, it is estimated that about half of the discrepancy is due to these implicit rents. Beyond the definitional differences, it is not clear that the National Accounts data are more accurate than the Susenas data. Whereas expenditure estimates from household surveys are obtained directly, most expenditure items in the National Accounts are derived as residuals and so absorb errors

12 This is the case when the cumulative distribution function of per capita expenditure or income in one period first order stochastically dominates the distribution in previous periods (see Deaton 1997).

13 For example, significant positive relationships between the level of expenditure and years of education of the household head or household size, and predictable changes over time.

and omissions elsewhere in the accounts. Consequently, Deaton (2000) concludes that 'it is quite unclear that the NAS (National Accounts Statistics) estimates of consumption should be treated as the gold standard to which the survey estimates should ideally correspond'.[14]

Notwithstanding the above, the Susenas data undoubtedly have some measurement and sampling problems. A concern that has been raised in Indonesia and elsewhere is that households in the tails of the distributions are likely to be under-represented in survey data. Wealthy households are more likely to refuse the intrusive BPS interview and those that are interviewed may tend to downplay their wealth. Very poor families with no fixed abode also pose difficulties in collection of data. Hence, the Susenas inequality estimates may be underestimates of total inequality.[15] The extent to which these difficulties affect trends in inequality depends on whether the degree of undersampling changes over time. While it is possible that as the population becomes wealthier, more people start understating their wealth and hence the increase in inequality may be underestimated, it is unlikely that this factor is driving the inequality results—especially when one considers that the urban 'middle class' constitutes such a small percentage of the population.[16] However, one would expect any changes in reporting patterns with development to also be apparent in other countries' data. That Indonesian inequality does not seem to follow blindly the patterns observed in other countries in the region suggests that measurement error is unlikely to be driving the results. Nevertheless, attempts at estimating the degree of undersampling would be valuable in putting upper and lower bounds on the inequality estimates. (The degree of undersampling is difficult to quantify, given that it arises out of a difficulty in locating and questioning the problematic households.) This criticism of the data extends to both the income and expenditure data.

Consumption data versus income data

The literature to date has relied overwhelmingly on the Susenas expenditure data. Is it the distribution of expenditure that one should be most concerned with or the distribution of income? A case can be made for examining both kinds of data. Conceptually, what we are interested in is the distribution of living standards across individuals. The question then becomes: does consumption or income best represent an individual's living standards? Theoretically, expenditure data are likely to reflect more closely households' permanent income and hence the welfare of the household. Households are able to save and dissave over time and so current income may not reflect household welfare as accurately as current expenditure. For instance, imagine an agricultural household that owns some fertile land and generally makes a good living out of its thrice-yearly rice crops. Every now and again there is a drought during which the household maintains its consumption by drawing upon its savings. In this case, current consumption is a better indicator of household welfare than is current income. In a bad year the household may appear very poor according to current income whereas measurement of current consumption would indicate that the household is in a relatively strong position over the longer term. For these reasons expenditure data (which include consumption of home produce) can be preferred to income data. Income may be more relevant, however, if the marginal propensity to save out of permanent income increases with income (as is likely) and if it is income inequality rather than expenditure inequality that the population most cares about. For example,

14 Deaton (2000) argues that one way of more closely examining this issue would be for statistical agencies to conduct special supplementary household surveys that focus on only a few goods. These more accurate survey measures could then be compared with the National Accounts figures.

15 Hughes and Islam (1981) argue that it is typically more difficult to obtain reliable data from poor households than rich ones, in which case it is not clear whether the Susenas inequality estimates would necessarily be biased downwards.

16 Dapice (1980) argues that under-estimation of the highest income households increased dramatically between 1970 and 1976. This argument is refuted in Hughes and Islam (1981).

although rich households may not be consuming a great deal more than less-wealthy households, if they are accumulating wealth (in excess of what is needed to smooth consumption) then, given people's known concerns with earnings relativities, the fact that they are securing a larger proportion of the country's earnings may have a detrimental impact on the welfare of those who are earning relatively less. The income data are also useful as a verification of trends found in the expenditure data and for comparison with the inequality measures of the many countries that calculate their inequality figures on the basis of income.

The Susenas does collect household income data. Like the consumption module, the income module is conducted on a three-yearly basis. The module collects detailed data on salaries and wages and the inputs and outputs of businesses run by the self-employed. It also collects information on non-labour income. Like the expenditure data, measurement errors undoubtedly occur but the questions are similarly structured to minimise the chance of error (for instance, rather than asking the self-employed to report their income, questions on inputs and outputs are asked) and the expected underlying patterns are evident in the data.

It is somewhat ironic that the income data have been largely ignored in the literature on income distribution. Some authors mention the data but many seem unaware of their existence, perhaps because BPS does not regularly publish statistics on the basis of the income data. Cameron (2000) and Alatas and Bourguignon (2000) are two studies that directly use these data. BPS has periodically calculated Gini coefficients on the basis of the Susenas per capita income figures. BPS figures for 1976 to 1982 are reported in Asra (2000). They show that, as expected, inequality in income is higher than in consumption because wealthier households save a larger percentage of their incomes and the trends in inequality across the nation and within urban and rural regions from both the income and expenditure series are very similar.

Income inequality Gini coefficients for 1984 and 1990 were calculated from the raw Susenas income data. The Gini coefficients were 0.42 and 0.43 respectively. For the mid to late 1980s when income inequality was felt to be a pressing social concern, the income data show (small) increases in inequality that were not captured in the expenditure data. The income data appears to be a significantly under-utilised resource in the literature on income distribution in Indonesia.[17]

Prices

A potentially more serious criticism of the inequality comparisons stems not from the Susenas data but from the difficulty of adjusting the data for regional cost of living differences. The BPS official figures (and most studies in the literature) do not allow for regional cost of living differences when calculating the inequality figures. Hence, in most studies Rp1,000 in East Nusa Tenggara is treated as though it buys the same as Rp1,000 in Jakarta. Similarly, no allowance is made for differences between rural and urban prices within provinces.[18] This failing has been widely acknowledged in the literature (Asra 1989, 1999; Booth 1993). Some studies have attempted to construct price indices to overcome this problem but these attempts have been largely *ad hoc* in nature because the data required to construct a reliable index are not collected. BPS also does

17 The National Labour Force Survey (Sakernas) also collects information on labour incomes for employees. Hence, it can provide information on the distribution of wages and salaries but not household income. These figures are difficult to interpret given the increase in the proportion of the labour force working as employees over time. Yoneda (1985) and Sigit (1985) use these data to examine the distribution of wage income within industrial sectors. Yoneda (1985) also examines the wage bill data in the Survey of Manufacturing Industries. Personal income tax data are also available and go back to at least 1921 (see Booth 1980). Given the small percentage of the population paying income taxes, inferences from these data cannot be extended to the population at large.

18 Note that some allowance is made for such differences in the calculation of the poverty figures. Different official poverty lines are used in rural and urban areas and by province—reflecting different prices and different consumption bundles. Ravallion and Bidani (1994) and Bidani and Ravallion (1993) criticise the official poverty lines on the basis that the urban poverty line is inflated relative to the rural poverty line, with the result that official urban poverty rates are artificially higher than the rural poverty rates.

not construct comprehensive price indices from the data that are available.[19]

Studies with cost of living adjustments

There are two fundamental issues associated with the use of price indices in the context of studies of inequality. The first is adjusting for spatial differences at a point in time and the other is adjusting for spatial differences in inflation rates. A study that attempts to look at changes in inequality across time would ideally deal with both of these issues. A further issue that arises is that price changes can affect individuals at different points in the income distribution differently. This point was highlighted during the recent financial crisis when food prices rose at a rate far above that of the CPI. Poorer households spend a larger proportion of their income on food and so were more disadvantaged by these changes.

We can gain some understanding of how controlling for regional price differences in one or more of the ways discussed above would affect the inequality indices by surveying the results of those studies that have made some attempt to control for prices. Sundrum (1979) was the first such study. This study examined changes in average per capita expenditure levels between 1970 and 1976. It used an urban consumer price index for 11 cities and the rural price index of nine essential commodities to control for differences in regional inflation rates.[20] The price indices show that prices increased more in urban areas than in rural areas. Urban price increases were about the same in Java and the Outer Islands but rural prices grew by less in the Outer Islands than in rural Java. Although Sundrum does not present Gini coefficients using the raw and price-adjusted data, the conclusions drawn from the price-adjusted data are the same as those of Hughes and Islam (1981) using the raw data. That is, that inequality increased in urban areas, declined in rural areas, increased in Java and declined in the Outer Islands and there was little change in the national average.

Hughes and Islam (1981) also produce some estimates that attempt to control for prices (in addition to the figures already presented in Tables 2, 3 and 4 which do not). They use an index constructed by Arndt and Sundrum (1975) and adapt it to allow crudely for rural–urban differences. On the basis of the smaller urban–rural difference in rice prices in the Outer Islands and the larger non-food price differential, they assume that in Java the rural price level is 90 per cent of the urban level, while it is 95 per cent in the Outer Islands. Note that, as in Sundrum (1979), no attempt was made to adjust for differences in expenditures at a point in time. The raw figures for this period show that inequality fell between 1964 and 1970 and was relatively stagnant over the 1970–76 period. Over this whole period they found that controlling for prices reduced the measures of inequality slightly. The price adjustments almost completely eliminated the difference between the average expenditure levels in Java and the Outer Islands in 1976.

Islam and Khan (1986) adjust for cost of living differences across space at one point in time. Their price index for the year 1976 is an adapted version of an index prepared by Esmara (1975). Prices in most of the Outer Island provinces are higher than those in Java. They also do not explicitly examine the effect of controlling for prices. They do however

19 Constructing comprehensive price indices, even from imperfect data, is not a simple process. To construct reliable price indices one needs data on the quantities of goods consumed by households (as collected in the Susenas) and the prices of those goods. It is possible to calculate implicit prices for food items in the Susenas by dividing the amount spent by the quantity bought. These implicit prices are not ideal because they incorporate not only price changes but also changes in the quality of food bought (Deaton 1997). Price data for all of the Susenas non-food items simply do not exist. Asra (1999) discusses the price data that are available in some detail and highlights the need for BPS to produce appropriate spatial and inter-temporal price indices. Kaiser, Choesni, Gertler, Levine and Molyneaux (2001) is the most comprehensive attempt to generate regional price indices. They use the available rural and urban price data and the Susenas consumption data to calculate regionally-disaggregated price deflators by demographic/income group. They use these estimates to examine the impact of the crisis on poverty and real wages. However, they do not examine inequality.

20 Sundrum (1979) does not explicitly control for regional differences in prices at a point in time but does note that the urban price index of the Outer Islands (a simple average across 20 provinces) was about 25 per cent higher than that for Java in 1970 and so a considerable part of the Outer Islands' higher average expenditure levels was due to price disparities.

report a Gini coefficient for 1976 per capita expenditure data of 0.35, more than the BPS figure of 0.34. Although both figures are based on per capita expenditure, it is not clear that the coefficients are strictly comparable. (They may be weighted differently; it is not clear if each household is one observation or if each individual is an observation.) It seems unlikely that taking account of higher urban prices and higher Outer Island prices would reduce inequality, given that the raw data show per capita expenditure to be higher in urban areas than in rural areas and Outer Island expenditure to be higher than expenditure on Java.

Hughes and Islam (1981) acknowledge that, as noted above, ideally one would also take into account differences in prices and price trends across income groups. This point was taken up by Asra (1989) and was a central issue in arguments about the impact of the recent crisis. Households at different points in the income distribution have different consumption packages. For instance, food makes up a greater proportion of poorer households' consumption bundles. During 1997, inflation, as measured by the consumer price index, was 11 per cent. The CPI consumption bundle, however, has a smaller percentage of its consumption devoted to food than the consumption bundles of the poor. Food prices rose 18 per cent in 1997. Hence, the poor were relatively worse-affected than the better off. Asra (1989) examines changes in the distribution of per capita expenditure between 1969 and 1981. He constructs separate price indices for households on the basis of their position in the distribution in the initial year.[21] These indices are not ideal, for the reasons discussed above. Asra (1989) finds that the price changes worked against low income households during 1970–76 and in their favour during 1976–81. This influence largely came through the difference in food and non-food inflation rates. The adjustment resulted in higher inequality figures than in the raw data (8.2 per cent higher in 1976) and show a sharp rise in inequality between 1969/70 and 1976, rather than the slight rise shown in the raw figures.[22]

It is clear that much could be gained in studies of inequality from the use of comprehensive, well-designed price indices. In particular, researchers need to be able to deflate for price differences across space at a point in time and also take into account regional differences in inflation rates. On the basis of the studies discussed above, it seems that controlling for prices may lead to lower values of inequality. It is also likely that these adjustments would reduce the extent of changes in inequality over time because as provinces become wealthier they tend to face higher prices.

The results of controlling for price changes at different points in the income distribution will depend on change in the ratio of food prices to non-food prices. In periods when food prices rise at a rate higher than the average inflation rate, the raw figures will underestimate inequality. In periods when non-food prices rise at a higher rate than food prices, inequality will be overestimated. Hughes and Islam (1981) argue that food prices are generally lower in rural areas and non-food items are cheaper in urban areas. Thus the raw figures may understate rural inequality and overstate urban inequality. It is not clear what effect this would have on national inequality. It is a topic worthy of further study.

Mechanical nature of decompositions

A further criticism of the existing literature is that it is largely mechanical in nature. That is, it does not tell us a lot about the economic causes of the changes. For instance, urban inequality is increasing over time, urban–rural differences are increasing and rural inequality decreased sharply until the early 1990s and then started to rise. While this

21 This was done in the following way: households were ranked in ascending order on the basis of their Susenas per capita expenditure; households were then divided into 20 fractile groups of equal size; using the data on value and quantity for 49 expenditure items, the Laspeyres index for each fractile group for the year k + 1 with the base year k was computed; and implicit price indices were then calculated for each decile in the distribution using the population size as weights.

22 More recently, Skoufias, Suryahadi and Sumarto (2000) applied household-specific regional price deflators to 100 Villages Survey consumption data over the crisis period. Prices moved against the poor during this period.

information is useful, we do not know what is causing the changes and whether it is desirable, or even possible, to reverse the process. Authors are only able to conjecture vaguely as to the likely impacts of economic changes. To be of use to policymakers, research on inequality needs to identify causes as well as effects.

Only a few studies have tried to link the changes in inequality to underlying changes in the economy. Akita, Lukman and Yamada (1999) attempt to do this in a simple fashion by relating the living standards of households to the educational attainment of the household head. They find that differences in mean household expenditure between education groups account for a large percentage of total inequality. Cameron (2000) decomposes the change in income inequality in Java between 1984 and 1990 into components associated with an ageing population, increased educational attainment, changes in the industrial structure, and changes in returns to education and incomes within industries. Although returns to education declined over the period, increased educational attainment was the largest contributor to the increase in inequality, followed by the move out of agriculture. Alatas and Bourguignon (2000) decompose the increase in income inequality between 1980 and 1996 into components associated with changes in the structure of earnings, changes in occupational choice and changes in the socio-demographic structure of the population. They find that the migration from rural to urban areas and the increase in non-farm self-employed work that has ensued has led to increased inequality. Offsetting this is the large negative impact of socio-demographic changes. It is not clear, however, what is driving this dampening effect. Further studies that attempt to explain the changes, preferably over extended time periods and across the nation, would be useful.[23]

Conclusions

In conclusion, and notwithstanding its potential pitfalls, the Susenas data is found to reasonably accurately capture changes in the distribution of income in Indonesian society. The data show that inequality in Indonesia has not increased markedly with development. Although urban inequality has increased, this change has largely been offset by declines in rural inequality. Indonesia can be considered to be 'lucky' in the sense that its industrial centre happens to be close to rural Java where many of the country's poorest families make their home. These households have benefited from the off-farm employment opportunities that industrialisation has offered. In this way the gap between rural households in the Outer Islands and rural households in Java has been reduced, as has rural inequality.

The literature on income inequality in Indonesia has evolved in a piecemeal fashion. Successive studies have used more recent data but few cover a long time period.[24] Differences in data configurations, inequality indices and decomposition methods severely retard the comparability of results from the various studies. The literature has also relied almost entirely on the use of summary statistics such as the Gini coefficient. These statistics condense information from the whole distribution of income or consumption into one figure and consequently can mask quite large distributional changes. An alternative approach is to plot the distributions to see exactly where changes in the distribution have occurred.[25] With unit record data now available from the Susenas from at least 1980 to 1999, it is appropriate to call for studies that cover a long time frame and utilise all of this data in a cohesive and informative manner.

23 Some studies use a Social Accounting Matrix approach which tracks how income flows through different sectors of the economy. This approach is a lot more structural and less transparent because it relies heavily on the model's underlying assumptions. Like all CGE modelling it is open to the criticism that the parameters specified in the model may in turn, be affected by the policy (see Thorbecke and Jung 1996 and Keuning 1995, for example).

24 Alatas and Bourguignon (2000) is an exception. Van der Eng (2000) examines inequality over a long time period but relies on estimates in the literature rather than applying the same methodology to data covering the entire period.

25 Recent studies using this approach include Skoufias et al. (1999), Beegle et al. (1999) and Cameron (2000).

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